

to the distractors. Results showed a constant response time irrespective of the increase in distractor numbers.

[0021] These experiments were followed by conjoin tasks whereby blue distractors were placed on a front plane whilst red distractors were located on a rear plane and the target was either red on the front plane or blue on the rear plane for stereo colour (SC) conjoin tests, whilst stereo and motion (SM) trials utilised distractors on the front plane moving up or on the back plane moving down with a target on either the front plane moving down or on the back plane moving up.

[0022] Results showed the response time for SC and SM trials were constant and below the 250 msec threshold regardless of the number of distractors. The trials involved conjoin as the target did not possess a feature unique to all the distractors. However, it appeared the observers were able to search each plane preattentively in turn without interference from distractors in another plane.

[0023] This research was further reinforced by Melton and Scharff [1998] in a series of experiments in which a search task consisting of locating an intermediate-sized target amongst large and small distractors tested the serial nature of the search whereby the target was embedded in the same plane as the distractors and the preattentive nature of the search whereby the target was placed in a separate depth plane to the distractors.

[0024] The relative influence of the total number of distractors present (regardless of their depth) verses the number of distractors present solely in the depth plane of the target was also investigated. The results showed a number of interesting features including the significant modification of the response time resulting from the target presence or absence.

[0025] In the target absence trials, the reaction times of all the subjects displayed a direct correspondence to the number of distractors whilst the target present trials did not display any such dependency. Furthermore, it was found that the reaction times in instances where distractors were spread across multiple depths were faster than for distractors located in a single depth plane.

[0026] Consequently, the use of a plurality of depth/focal planes as a means of displaying information can enhance preattentive processing with enhanced reaction/assimilation times.

[0027] It is thus believed that a means of overcoming the above described drawbacks is available by harnessing the peripheral vision and subconscious perception of the reader to assimilate additional information sources simultaneously with the process of the conventional reading of the instruments in order to enhance the speed and effectiveness of the whole reading/viewing process.

[0028] This would have particular relevance to the displaying of alarm situations as this is when the time (or lack of it) in which to respond to the information on a display is most critical.

[0029] It is an object of the present invention to address the foregoing problems or at least to provide the public with a useful choice.

[0030] Further aspects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

DISCLOSURE OF INVENTION

[0031] According to an aspect of the present invention there is provided a method of displaying information on an instrument for viewing by a user characterised by the steps of

[0032] a) displaying information on a first focal plane, and

[0033] b) moving the information displayed on the first focal plane to a different focal plane when an alarm or critical situation arises, and

[0034] c) then moving the information back to the first focal plane, and

[0035] d) repeating steps b) and c) in order that the viewer of the instrument becomes aware of the displayed information.

[0036] According to a further aspect of the present invention there is provided an instrument for displaying information for viewing by a user, including

[0037] a visual display system including at least two single level screens spaced physically apart to form a multi-level screen, and

[0038] information on a first focal plane

[0039] characterised in that

[0040] when an alarm or critical situation arises the information displayed on the first focal plane will move to a different focal plane and then back to the first focal plane in order that the viewer of the instrument become aware of the displayed information.

[0041] It should be understood that within the present specification the term "information" may consist of alphanumeric characters, symbols, plain text, images, a combination of the same or any other means of visually representing information.

[0042] In preferred embodiments of the present invention the information will be displayed on a multi-level three-dimensional display device such as that disclosed in New Zealand Patent Number 505800.

[0043] However this should not be seen to be a limitation on the present invention in any way as in other embodiments the information may be displayed on any display device that has more than one focal plane.

[0044] It is envisaged that within preferred embodiments of the present specification a control circuit will have access to a number of system parameters in order that when a parameter goes beyond its specified level then the control circuit will signal to the display in order that the appropriate information displayed on the first focal plane will move to another focal plane and then back to the first focal plane so that the viewer will become aware of the displayed information and can therefore can take steps to rectify the situation.

[0045] Preferably the movement of the information between focal planes is done a number of times—sufficient for the viewer to become aware of the displayed information.